Original Research Article

# Cytological evaluation of lymph node aspirates, correlation with clinical findings and histopathology at a tertiary care center in the Konkan belt of Maharashtra state, India

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## Abstract

**Background:** The present Konkan region based study has been taken up to study the FNAC in the lesions of lymph nodes and to study the different cyto-morphological patterns associated with various lymphadenopathies from different sites in well stained smears. The cytodiagnosis was compared with available histopathology, thus verifying the accuracy of FNAC. **Methods:** The present study is a retrospective study carried out from 1/8/2016 to 31/7/2018. The Fine needle cytology material consisted of 70 patients with Lymph node swellings from different sites coming to Pathology department with various complaints. The study period was of three years' duration. The alcohol fixed (PAP, HandE) and air dried smears (MGG, AFB) smears of nodal lesions were studied for cytomorphological features. Histopathology correlation was done, wherever possible. **Results:** Overall incidence of lymph node FNACS was 2.16 %. 51 were males (72%) and 19 were females (27 %). Majority of the lymph node FNAC cases were in 6th decade of life. Most common site of lymphadenopathy was cervical nodes (64.28%) followed by submandibular lymph nodes (17.14%). Most common cytological diagnosis of lymph-node FNAC was metastatic squamous cell carcinoma (44.28%) followed by inadequate opinion cases (Inadequacy rate-18.57 %). Inflammatory conditions (lymphadenitis) in lymph node FNACs were 14.29%. Lymphoid malignancies were seen in 68.57%. Lymphoma cases in toto were diagnosed in 12.86%. Metastasis was diagnosed in 54.29%. Histopathology (gold standard test) correlation with cytological findings of nodal FNACs were available in 43/70 cases. Maximum cases were nodal metastasis of squamous cell carcinoma on cyto-histo correlation. **Conclusion:** Cervical lymph nodes were main sites for nodal metastasis from oral-cavity tumors as oral cancers are more prevalent in our Konkan belt. Correlation of lymph node smear cytology with 'gold standard' histological reports revealed excellent diagnostic parameters, implying the efficacy of cost-effective, cheaper, simple procedure of smear cytology.

**Key Words:** Fine needle aspiration cytology (FNAC), Lymph nodes

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## INTRODUCTION

The term "cytology" was coined from the Greek word "cytos" meaning a hollow vessel, and "logous" mean study.[1] First recorded utilization of FNAC was in 1833, when at St. Bartholomen's Hospital, London aspiration was undertaken on a large mass in the liver. Hermann Lebert (1845) used cell samples aspirated from patients by using cannula to diagnose cancer.[2] Ward (1914) published a report on efficacy of lymph node aspiration in diagnosis of various neoplastic diseases.[2] M. Kun (1847) for the first time used a needle with a cutting edge in

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securing material from subcutaneous tumors and made smears to study the cytological features.[3] Greig and Gray (1905) aspirated swollen lymph nodes by a needle and a syringe from patients with sleeping sickness to identify the mobile trypanosomes.[4] In the succeeding century, FNAC in the diagnosis of the lymphadenopathy has become an acceptable and widely practiced minimally invasive technique which is simple, safe, rapid, relatively pain-free and cost-effective as well as accurate.

## AIMS AND OBJECTIVES

The cyto-findings differ in different regions. Thus the aims and objectives were:

1. To know the prevalence of lymph node FNAC lesions and determine common conditions in patients as inflammatory/infectious, primary lymphoid malignancy and metastasis.
2. To determine the incidence of malignancy/ metastasis in patients presenting with lymph node lesions
3. To evaluate the role of fine needle aspiration cytology in the initial assessment and the clinical management of patients of lymph node lesions with respect to age, sex and site of lesion.
4. To document the diagnostic parameters of the FNAC study of the lymph node lesions in correlation with Histopathology, wherever possible.

## MATERIALS AND METHODS

This is a cross-sectional, descriptive, retrospective study involving 70 cases of lymph node lesions from different sites. Records and case files of patients with urinary bladder carcinoma from 1st August 2016 to 31st July 2018 (3 years) were studied. Data was evaluated for age, gender, clinical symptoms and histopathological characteristics at the time of presentation. Outdoor as well as indoor patients from Department of Surgery, ENT, Medicine, TB chest and Cancer cases were evaluated. Cases with nodal swellings were referred to Department of Pathology for FNAC.

**Inclusion Criteria:** All patients with nodal masses of both sexes and of all age groups.

**Exclusion Criteria**

1. Suspected masses of vascular origin / pulsatile swelling.
2. Patients who were not willing for FNAC.
3. Patients who have bleeding disorders.

**Materials required for FNAC:** Syringe of volume 5cc / 10 cc (plastic disposable), Needles: 22-24 gauge, Glass slides, Papanicolaou stain, HandE stain, MGG stain, AFB stain

**Method**

1. **ASPIRATION WITH A SYRINGE (FNAC)**: The needle attached to the syringe was inserted into the swelling tangentially. Suction was applied by retracting the syringe plunger and material aspirated.[3]
2. **FNC: FINE NEEDLE CYTOLOGY WITHOUT ASPIRATION (WITHOUT A SYRINGE)**: The swelling identified was immobilized. Then the needle, held by the hub, was placed within the swelling and moved back and forth to collect small fragments of tissue. The fragments were collected within the shaft of the needle. The hub-opening of the needle should be left uncovered during sampling.[3]

**Processing of the Sample:** The cytological material in the needle was expelled on a clean, dry slide using air in a syringe. The alcohol fixed (PAP, HandE) and air dried smears (MGG) smears of nodal lesions were studied for cytomorphological features. Histopathology correlation was done wherever possible.[2]

## OBSERVATIONS AND RESULTS

Total 70 cases were included in this study over three years.

**Table 1:** Distribution of age of patients

| Age | Male | Female | Total | Percentage |
|---|---|---|---|---|
| 0-10 | - | 2 | 2 | 2.85% |
| 11-20 | 5 | 1 | 6 | 8.57% |
| 21-30 | 2 | 2 | 4 | 5.71% |
| 31-40 | 2 | 1 | 3 | 4.28% |
| 41-50 | 10 | 1 | 11 | 15.71% |
| 51-60 | 15 | **8** | 23 | **32.85%** |
| >60 | **17** | 4 | 21 | 30% |
| **Total** | **51** | **19** | **70** | **100%** |

**Table 2:** Percentage distribution of age of patients

| Age | Percentage |
|---|---|
| 0-10 | 2.85% |
| 11-20 | 8.57% |
| 21-30 | 5.71% |
| 31-40 | 4.28% |
| 41-50 | 15.71% |
| 51-60 | 32.85% |
| >60 | 30% |

Table nos. 1,2 show the distribution of age of patients in our study. Total 70 cases were included in this study over three years, out of which 51 were males ( 72%) and 19 were females ( 27 %). This shows that there is predominance of males over the females in lymph node FNACs. Majority of male patients were above 60 years old, whereas majority of females were in between 51-60 years of age. Majority of the lymph node FNAC cases in toto were in 51-60 years of age.

**Table 3:** Clinical details of the 42 cases

| Clinical Details | No. of Cases | % |
|---|---|---|
| Drugs use | 7 | 15% |
| K/C/O melanoma and carcinoma, RT,CT | 14 | 35% |
| H/O TB | 4 | 10% |
| Lymphadenitis with fever, cough | 16 | 40% |
| HIV | 1 | 2.38% |
| **Total** | **42** | **100%** |

Table no.3 shows that clinical details were adequately available in 42 of the cases in patient's requisition form, signifying the need by clinicians, surgeons to specify the same in patient's requisition form. Most number of cases were included in category of fever, cough followed by those with known case of malignancy / radio-chemotherapy.

**Table 4:** Sites of Lymphadenopathy

| Sites | No of cases | % |
|---|---|---|
| Cervical | **45** | **64.28%** |
| Submandibular | **12** | **17.14%** |
| Infra-auricular | 2 | 2.85% |
| Axillary | 3 | 4.28% |
| Inguinal | 1 | 1.42% |
| Supra-clavicular | 6 | 8.57% |
| Perigastric | 1 | 1.42% |
| **Total** | **70** | **100%** |

From the above Table no. 4, it is evident that the most common site of lymphadenopathy was cervical lymph node (64.28%) followed by submandibular lymph node (17.14%).

**Table 5:** Cytological diagnosis of lymph nodes

| Cytological diagnosis | No of cases | % |
|---|---|---|
| **Metastasis of S.C.C.** | **31** | **44.29%** |
| NHL | 7 | 10% |
| Granulomatous Lymphadenitis | 4 | 5.71% |
| Malignant Melanoma | 5 | 7.14% |
| Hodgkin lymphoma | 2 | 2.85% |
| Inadequate for opinion | **13** | **18.57%** |
| Round cell tumor | 1 | 1.43% |
| TB Lymphadenitis | 4 | 5.71% |
| Acute suppurative lymphadenitis | 2 | 2.85% |
| Sarcoma metastasis | 1 | 1.43% |
| **Total** | **70** | **100%** |

Table no. 5, shows that the most common cytological diagnosis of lymph-node FNAC was metastatic squamous cell carcinoma (44.29%) followed by inadequate opinion due to lack of cellularity, improper sampling, lack of palpable swelling, hemorrhagic aspirate (Inadequacy rate-18.57 %). Non-neoplastic Inflammatory conditions (lymphadenitis) in lymph node FNACs were 10 cases (14.29%). Lymphoid malignancies were seen in 47 cases (68.57%) of total FNAC cases of lymphadenopathy. Lymphoma (Primary lymphoid malignancies) cases were diagnosed in 9 cases (12.86%) of total FNAC cases of lymphadenopathy. Metastasis (Secondary lymphoid malignancies) cases were diagnosed in 38 cases (54.29%) of total FNAC cases of lymphadenopathy. There were more lymphoid malignancies at our institute because our research center caters to many oral cancer patients and due to tie-up with TATA cancer hospital, Mumbai.

**Table 6:** Metastatic lymph node sites with respect to primary tumor origin

| Sites | No of cases | Tumor origin |
|---|---|---|
| Cervical | 20 | Trachea- 0<br>Larynx- 1<br>Tongue- 10<br>Buccal mucosa- 7<br>Tonsil- 1<br>Scalp- 0<br>Esophagus- 1 |
| Axillary | 5 | Breast- 4<br>Skin- 1<br>Adrenal-0 |
| Inguinal | 1 | Prostate- 1<br>Penis-<br>Skin- |
| Supraclavicular | 4 | Breast-3<br>Ovary-1 |
| Submandibular | 7 | Buccal mucosa – 4<br>Tongue-3 |
| Perigastric | 1 | Stomach-1 |
| **Total** | **38** | **-** |

Table no. 6 shows that the total number of metastatic lymph node cases diagnosed on FNACs was 38 cases out of 70 cases (54.29% of total cases). Cervical lymph nodes were main sites for nodal metastasis from oral cavity tumors. Oral cancers are more prevalent in our Konkan belt.

**Table 7:** Morphological characteristic of clinically palpable lymph nodes for FNAC

| Size of lymph node | Nodal Metastasis (n=38) | Lymphadenitis (Inflammatory conditions) (n=10) | Lymphoma cases (n=9) |
|---|---|---|---|
| 0-1cm | 5 | 3 | - |
| 1-2 cm | 5 | 6 | 2 |
| 2-3 cm | 15 | 1 | 3 |
| 3-4 cm | 13 | - | 4 |

Table no.7 shows that the size of palpable lymph nodes for FNAC procedure. Size was more in neoplastic conditions and less for inflammatory conditions / lymphadenitis.

**Table 8:** Histopathology (gold standard test) findings as 43 nodal cases underwent biopsy

| Histopathology broad-based diagnosis | Histopathology : specific diagnosis with number of cases available for subsequent correlation |
|---|---|
| Infections/lymphadenitis | Tuberculosis lymphadenitis – 3<br>Reactive lymphadenitis -2 |
| Primary lymphoid malignancies / lymphoma | Non-Hodgkin lymphoma – 3<br>Hodgkin lymphoma – 2 |
| Secondary lymphoid malignancies / metastasis | Metastatic SCC – 29<br>Metastatic Melanoma - 2<br>Metastatic Sarcoma - 1<br>Round cell tumor-1 |
| **Total** | **43** |

Maximum cases were correlated as nodal metastasis on histopathology. True positive (T.P.) cases on cyto-histopathology correlation were 36/43. True negative (T.N.) cases on cyto-histopathology correlation were 4/43. False positive (F.P.) cases on cyto-histopathology correlation were 2/43. False negative (F.N.) cases on cyto-histopathology correlation were 1/43.

**Table 9:** Histopathology (gold standard test) correlation with cytological findings in 43 cases

| | Total HPR | Cytological Diagnosis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Histopathological diagnosis | No. of cases | M.S.C.C | NHL | Granulomatous Lymphadenitis | Melanoma mets | HL | Inadequate for opinion | Round cell tumor | TB | Acute suppurate lymphade-nitis | Sarcoma mets |
| Infections/lymphadenitis | **5** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 |
| Primary lymphoid malignancies / lymphoma | **5** | 0 | 2 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Secondary lymphoid malignancies / metastasis | **33** | 26 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 1 |

**Table 10:** Shows Cytology Vs. Histopathology chart for calculating diagnostic parameters

| | Histo | | Total |
|---|---|---|---|
| **Cyto** | T.P.<br>36 | F.P.<br>2 | 38 |
| | F.N<br>1 | T.N<br>4 | 5 |
| **Total** | 37 | 6 | 43 |

**Diagnostic parameters on cyto-histo correlation**

Sensitivity = TP/TP + FN X 100 = $\frac{36}{36+1}$ X 100 $\frac{3600}{37}$ = **97. 29%;** Specificity = TN/F.P + T.N X 100 = $\frac{4}{4+2}$ X 100 = $\frac{400}{6}$ = **66. 67%**

Positive predictive value: PPV=TP/T.P+FP X 100 = $\frac{3600}{38}$ = **94. 73 %;** Negative predictive value: NPV = TN/FN.TN X 100 = $\frac{400}{5}$ = **80%**

Diagnostic accuracy = TN+TP / TN+FP+FN+TP X 100 = $\frac{4000}{43}$ = **93.02%**

**Figure 1:**

**Figure 2:**

**Figure 3:**

**Figure 4**

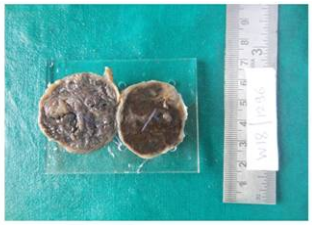
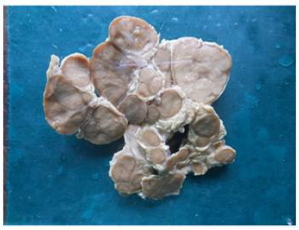


**Figure 5**

**Figure 6**

**Figure 7**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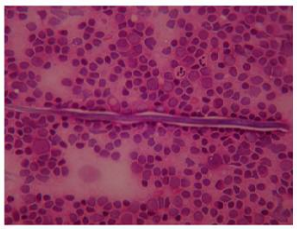
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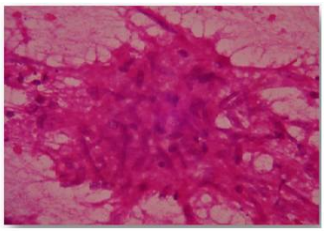
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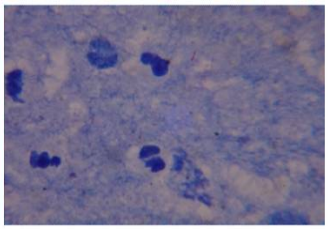
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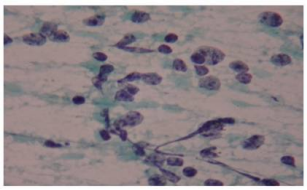
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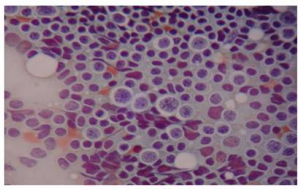
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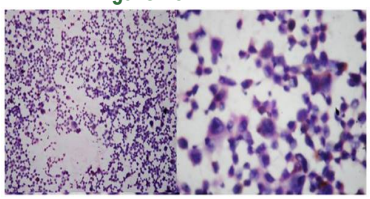
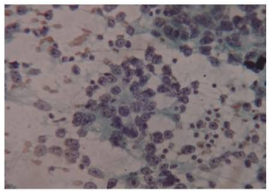


Figure 14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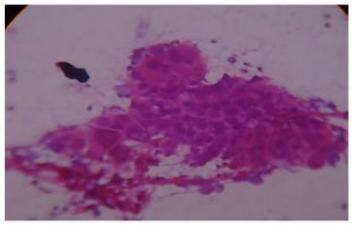
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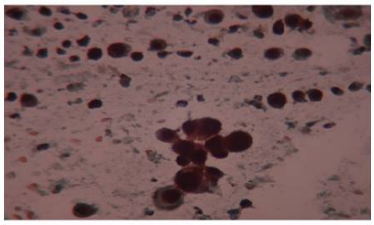
Figure 17

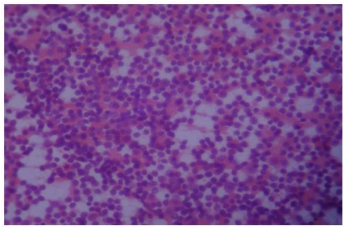
Figure 18

**Figure 1:** Clinical photograph- Patient with left cervical node metastasis for FNAC; **Figure 2:** Clinical photograph- Patient with right cervical node metastasis for FNAC; **Figure 3:** FNAC procedure with Syringe holder; **Figure 4:** Gross image: A lymph node showing caseation necrosis in a cavity. Case of TB lymph node; **Figure 5:** Gross image: A lymph node showing brownish-black nodules. Case of Melanoma metastasis; **Figure 6:** Gross image: A lymph node showing pus filled cavities. Case of suppurative lymphadenitis; **Figure 7:** Gross image: A lymph node showing reactive follicles. Case of Reactive lymph node; **Figure 8:** Gross image: Multiple large, discrete lymph nodes with focal areas of matted nodes. Case of Hodgkins lymphoma; **Figure 9:** Microphotograph showing reactive LN with Microfilarial parasite (HandE, X100); **Figure 10:** Microphotograph showing epitheloid cell granuloma (HandE stain, x400); **Figure 11:** Microphotograph showing caseous necrosis and Acid fast bacilli (ZN stain, x1000); **Figure 12:** Microphotograph showing diffuse large B cell lymphoma (PAP, x1000); **Figure 13:** Microphotograph showing polymorphous lymphoid population with features of Reactive Lymphadenitis (Giemsa, X400); **Figure 14:** Microphotograph showing LN with the presence of Hodgkin's lymphoma cells in mixed lymphoid background. (Left-Giemsa, x100; Right-Giemsa, x400); **Figure 15:** Microphotograph showing nodal metastasis of adenocarcinoma (PAP, X400); **Figure 16:** Microphotograph showing nodal metastasis of squamous cell carcinoma (HandE, X400); **Figure 17:** Microphotograph showing lymph nodal metastasis of Malignant melanoma (PAP, X1000); **Figure 18:** Microphotograph showing monomophic Non Hodgkin Lymphoma cells (Giemsa, X100)

## DISCUSSION

In the present study, the total cytology cases reported by our pathological department from 1st August 2016 to 31st July 2018 was 3245. The overall incidence of lymph node FNAC cases was 70/3245x100 = 2.16 % by our pathological department. Though it does not give an accurate incidence in general population, it gives a fair idea of the incidence of lymph node FNACs in our Konkan based rural tertiary care diagnostic care center and hospital. Though there are many studies on lymph node FNACs, we did not find more cumulative study or series after thorough search based on this region of India. However comparative studies of individual nodal lesions are used in the discussion below. In present study, we have compared the clinical findings and histopathological findings of 70 cases which comprised of a self-referred population referred to this tertiary care institute during the three year study period.

**Table 11:** Comparative study of Lymphadenopathy sites for FNAC

| Sites | Present Study [2018] (%) | Ghartimagar D, *et al* [2011][5] (%) | Anne R, *et al* [2012][6] (%) |
|---|---|---|---|
| Cervical | 64.28 | 48 | 62 |
| Submandibular | 17.14 | - | - |
| Infra-auricular | 2.85 | - | - |
| Axillary | 4.28 | 12 | 22 |
| Inguinal | 1.42 | 6 | 10 |
| Supra-clavicular | 8.57 | - | 6 |
| Peri-gastric | 1.42 | - | - |

The above table shows comparative study between our study and study of two other authors. In our study, cervical lymph node as FNAC site was nearby similar to the percentage cited by both studies. Compared to both the other authors, axillary node as FNAC site is far less in our study.

**Table 12:** Comparative study of cytological diagnosis of Lymphadenopathy cases

| Cytological Diagnosis | Present Study [2018] (%) | I Bagwan, *et al* [2006][7] (%) | Arul P, *et al* [2016][8] (%) |
|---|---|---|---|
| Metastasis of S.C.C. | 44.29 | 36.81 | 7.3 |
| NHL | 10 | - | 1.8 |
| Granulomatous Lymphadenitis | 5.71 | - | 1.6 |
| Malignant Melanoma | 7.14 | - | 12.5 |
| Hodgkin lymphoma | 2.85 | - | 1.2 |
| Inadequate for opinion | 18.57 | 9 | - |
| Round cell tumor | 1.42 | - | - |
| TB Lymphadenitis | 5.71 | 1.52 | 44.1 |
| Acute suppurative lymphadenitis | 2.85 | 25 | 3 |
| Sarcoma metastasis | 1.42 | - | - |

The above table shows comparative study between our study and study of other two authors. Our study and I Bagwan, *et al* study[7] showed somewhat similar comparable results with metastatic SCC as most common nodal cytological diagnosis. In our study, TB lymphadenitis is far less than Arul P, *et al* study[8] due to low prevalence of TB in this Konkan belt. This is due to low population density in this belt and lack of over-crowding population/ localities.

**Table 13:** Comparative study of non–neoplastic lesions on Lymph node FNAC

| Cytological Diagnosis | Present Study [2018] (%) | Anil Kumar Suri, *et al* [2016][9] (%) |
|---|---|---|
| Reactive/suppurative | 2.86 | 35 |
| Tubercular | 5.71 | 32 |
| Inflammatory/ Granulomatous | 5.71 | 8 |
| **Total** | **13.29** | **75** |

The above table shows comparative study between our study and study of other author. Non-neoplastic lymph node conditions were fewer in number in our study compared to the other study because of demographic difference, differences in sample size, more cases of nodal metastasis and due to cancer center services at our set-up owing to collaboration with TATA cancer institute of Mumbai.

**Table 14:** Comparative study of primary lymphoid malignancies (lymphomas)

| Cytological Diagnosis | Present Study [2018] (%) | Anil Kumar Suri, *et al* [2016][9] (%) |
|---|---|---|
| Hodgkin lymphoma | 2.86 | 2 |
| Non-Hodgkin lymphoma | 10 | 7 |

Lymphoid malignancies were seen in 68.57% of total cases. Lymphomas (Primary lymphoid malignancies) cases were diagnosed in 12.86% of total lymph node FNACs and comprised 22.22% of total lymphoma cases diagnosed on FNACs. The above table shows comparative study between our study and study of other author. Our study and Anil Kumar Suri, *et al* study[9] showed similar cytological diagnosis of Hodgkin lymphoma. Our present study showed more Non–Hodgkin lymphoma cases than Anil Kumar Suri, *et al* study.

**Table 15:** Comparative study of secondary lymphoid malignancies (metastasis)

| Cytological Diagnosis | Present Study [2018] (%) | Anil Kumar Suri, *et al* [2016][9] (%) |
|---|---|---|
| Squamous Cell Carcinoma | 44.29 | 9.5 |
| Adenocarcinoma | 0 | 3.0 |
| Malignant Melanoma | 7.14 | 0.5 |
| Sarcoma metastasis | 1.43 | - |
| Round cell tumor | 1.43 | - |

Lymphoid malignancies were seen in 68.57% of total cases. Lymphomas (Secondary lymphoid malignancies/metastasis) cases were diagnosed in 54.29% of total lymph node FNACs and comprised 77.78% of total lymphoma cases diagnosed on FNACs. The above table shows comparative study between our study and study of other author. Our study showed more cases of cytological diagnosis of metastatic Squamous cell carcinoma. Also overall metastasis was more in number compared to other study because our study caters to cancer patients owing to TATA, Mumbai tie-up.

**Table 16:** Comparative study of Morphological characteristic of clinically palpable lymph nodes for FNAC

| Lymph Node size | Present Study [2018] (%) | | Matthias Hammon, *et al* [2015][10] (%) | |
|---|---|---|---|---|
| | Metastasis (n=38) | No Metastasis (n=10) | Metastasis (n=21) | No Metastasis (n=15) |
| >2.0 cm | 26% | 35% | 71% | 53.34 |
| <2.0 cm | 73% | 65% | 29% | 46.66 |

The above table shows comparative study between our study and study of other author. This shows that non-neoplastic/non-metastatic conditions in lymph nodes had lesser size in our study compared to metastatic nodal lesions on cytology.

**Table 17:** Comparative study of diagnostic parameters of present study with previous studies

| Study | No | Sensitivity (%) | Specificity (%) | Accuracy (%) | PPV (%) | NPV (%) |
|---|---|---|---|---|---|---|
| Hafez *et al* [2011][11] | 157 | 90.9 | 67.2 | 82.2 | 82.6 | 81.3 |
| Babu *et al* [2014][12] | 31 | 89.4 | 90.9 | 89.8 | 96.2 | 74.1 |
| Ahmed *et al* [2009][13] | 48 | 95.8 | 100 | 93 | _ | _ |
| Adhikari *et al* [2011][14] | 55 | 100 | 100 | 90.9 | 100 | 100 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Abdulnabi *et al* [2007][15] | 44 | 78.6 | 66.7 | 73.9 | _ | _ |
| Dukare *et al* [2014][16] | 34 | 93.3 | 100 | 97.1 | _ | _ |
| Arul P *et al* [2016][9] | 188 | 82.4 | 98.1 | 95.2 | 90.3 | 96.02 |
| Present study [2018] | **70** | **97.29** | **66.67** | **94.73** | **80** | **93.02** |

The above table shows comparative study between our study and study of many other authors. Our study showed sensitivity, specificity, accuracy, positive predictive value and negative predictive value as 97.29%, 66.67%, 94.73%, 80% and 93.02% respectively. These results were comparable with most of the published studies.

## CONCLUSION

In the present study, the total cytology cases reported by our pathological department from 1st August 2016 to 31st July 2018 was 3245. The overall incidence of lymph node FNAC cases was 70/3245x100 = 2.16 % by our pathological department. 70 cases were included in this study over three years, There is predominance of males over the females in lymph node FNACs. Majority of the lymph node FNAC cases were in 51-60 years of age (6th decade of life). Most common site of lymphadenopathy is cervical lymph node (64.28%) followed by submandibular lymph node (17.14%), unlike other studies. Most common cytological diagnosis of lymph-node FNAC was metastatic squamous cell carcinoma (44.28%) followed by inadequate opinion cases. Inadequacy was due to lack of cellularity, hemorrhagic aspirate, lack of palpable swelling, improper cytology aspiration technique by resident doctor (Inadequacy rate-18.57 %). Inflammatory conditions (lymphadenitis) in lymph node FNACs were 14.29% Lymphoid malignancies were seen in 68.57% Lymphoma (Primary lymphoid malignancies) cases were diagnosed in 12.86%. Metastasis (Secondary lymphoid malignancies) cases were diagnosed in 54.29%. There were more lymphoid malignancies at our institute because our research center caters to many cancer patients and due to tie-up with TATA cancer hospital, Mumbai. Total number of metastatic lymph node cases diagnosed on FNACs was 38 cases out of 70 cases (54.29% of total cases). Cervical lymph nodes were main sites for nodal metastasis from oral cavity tumors. Oral cancers are more prevalent in our Konkan belt. The size of palpable lymph nodes for FNAC procedure was more in neoplastic conditions and less for inflammatory conditions / lymphadenitis. Histopathology (gold standard test) correlation with cytological findings of nodal FNACs were available in 43 of the 70 cases. Maximum cases were confirmed as nodal metastasis of squamous cell carcinoma on cyto-histo correlation. Oral cancers are more prevalent in our Konkan belt. Correlation of lymph node smear cytology with 'gold standard' histological reports reveal excellent diagnostic parameters, implying the efficacy of cost-effective, cheaper, simple procedure of smear cytology.

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